

Title (en)
METHOD AND APPARATUS FOR MINIMIZING WASTEWATER DISCHARGE

Title (de)
METHODE UND VORRICHTUNG ZUR MINIMIERUNG DES ANFALLENDEN ABWASSERS

Title (fr)
PROCEDE ET APPAREIL DE REDUCTION DE LA PRODUCTION D'EAUX USEES

Publication
EP 0879085 B1 20061213 (EN)

Application
EP 97903114 A 19970124

Priority
• US 9701210 W 19970124
• US 59280396 A 19960126

Abstract (en)
[origin: US5776340A] A method for minimizing wastewater discharge generated in an ion exchange regeneration system having a cation exchange bed and an anion exchange bed, which method is characterized in that all of the segments of regenerant and displacement rinse are recirculated in a common loop, and shifted forward by one position, whereby the first segment is discarded in the subsequent cycle, and the last segment in the subsequent cycle is provide by fresh rinse, while chemicals are added as necessary, and in final rinse cycle, rinse flows through the cation exchange bed and the anion exchange bed in series, and recirculates in a loop, thereby eliminating over 90% of waste.

IPC 8 full level
B01J 49/00 (2006.01); **C02F 1/42** (2006.01); **B01J 39/04** (2006.01)

CPC (source: EP KR US)
B01D 15/08 (2013.01 - KR); **B01J 39/04** (2013.01 - EP US); **B01J 49/08** (2016.12 - EP US)

C-Set (source: EP US)
B01J 39/04 + B01J 41/04

Designated contracting state (EPC)
AT BE CH DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

DOCDB simple family (publication)
US 5776340 A 19980707; AT E347933 T1 20070115; AU 1710397 A 19970820; AU 709121 B2 19990819; CA 2243978 A1 19970731; CN 1117634 C 20030813; CN 1213328 A 19990407; DE 69737090 D1 20070125; DE 69737090 T2 20070606; EP 0879085 A1 19981125; EP 0879085 A4 20051005; EP 0879085 B1 20061213; IL 125363 A0 19990312; JP 2000503889 A 20000404; KR 100461764 B1 20050705; KR 19990081950 A 19991115; US 5718828 A 19980217; WO 9726992 A1 19970731

DOCDB simple family (application)
US 78769197 A 19970123; AT 97903114 T 19970124; AU 1710397 A 19970124; CA 2243978 A 19970124; CN 97193049 A 19970124; DE 69737090 T 19970124; EP 97903114 A 19970124; IL 12536397 A 19970124; JP 52704997 A 19970124; KR 19980705667 A 19980723; US 59280396 A 19960126; US 9701210 W 19970124